



f a c t s h e e t

Environmental Compliance for Laboratories

Hazardous Waste & Industrial Wastewater

Laboratories may conduct experiments involving chemical reactions or use chemical reactions and other techniques to analyze various substances (e.g., chemicals, drugs, and environmental media). These activities generate amounts of chemical wastes that may be subject to Massachusetts Department of Environmental Protection (MassDEP) regulations and/or permitting requirements governing the management of hazardous waste and wastewater.

While laboratories typically use much smaller amounts of chemicals than manufacturing facilities, laboratories are required to ensure that their operations are conducted in accordance with the Commonwealth's environmental laws, as well as federal and local environmental laws.

The regulatory requirements described in this fact sheet apply to many types of laboratories, including but not limited to analytical, research and development, educational and institutional, product development and testing, and medical laboratories. If you have questions about whether the requirements described below apply to your laboratory, contact your MassDEP Regional Office (see contact information at the end of this fact sheet).

Massachusetts Department of
Environmental Protection
One Winter Street
Boston, MA 02108-4746

Commonwealth of
Massachusetts
Charles D. Baker,
Governor

Executive Office of
Energy & Environmental Affairs
Matthew A. Beaton,
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Environmental Protection
Martin Suuberg,
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Industrial Wastewater Requirements

Wastewater from washing of equipment and/or glassware in the laboratories, and process wastewater are considered to be "industrial wastewater," and must be properly managed in accordance with all applicable state and local rules. MassDEP industrial wastewater regulations can be found at:

<http://www.mass.gov/eea/agencies/massdep/water/wastewater/industrial-wastewater.html>

- **Laboratories that discharge wastewater to a river, stream or other waterbody** may need to obtain a National Pollution Discharge Elimination System permit (NPDES), which would allow them to discharge to a water body near their facility. Learn more:

<http://www.mass.gov/eea/agencies/massdep/water/wastewater/surface-water-discharge-permitting-npdes.html#2>

- **Laboratories that discharge any amount of industrial wastewater to the ground surface** must obtain a groundwater discharge permit from MassDEP. For more details on the different types of groundwater discharges, please see the Groundwater Discharge Program regulations (314 CMR 5.03 and 5.04), see:

<http://www.mass.gov/eea/docs/dep/service/regulations/314cmr05.pdf>

Learn more about groundwater discharge permits:

<http://www.mass.gov/eea/agencies/massdep/water/wastewater/groundwater-discharge-permitting.html>

- **Laboratories that discharge wastewater to a sewer** must obtain municipal or district sewer system operator approval for this wastewater prior to discharging it into the sewer system. These laboratories may also be required by the municipal or district sewer system to pre-treat their wastewater before discharging to the sewer. Depending on the discharge volume from the laboratories and the type of treatment plant receiving the wastewater, laboratories might also need a MassDEP permit. For additional information, see:
<http://www.mass.gov/eea/agencies/massdep/water/wastewater/industrial-wastewater.html>

- **Laboratories that discharge wastewater to a septic system** (i.e., are located in an area without access to sewers) *may not discharge wastewater* – except for sanitary wastewater from bathrooms and kitchens – to the septic system. Non-sanitary wastewater must be stored in an industrial wastewater holding tank. The tank must be installed and operated according to the requirements found at 314 CMR 18.00.

Learn more about septic systems:

<http://www.mass.gov/dep/water/wastewater/septicsy.htm>

Learn more about industrial wastewater holding tanks:

<http://www.mass.gov/eea/agencies/massdep/service/approvals/holding-tanks-forms.html>

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Hazardous Waste Requirements

Laboratories commonly generate several types of hazardous wastes (e.g., used solvents, dyes/pigments, pharmaceuticals). In addition, many cleaners and detergents used in labs may be classified as hazardous waste. Check the Material Safety Data Sheet (MSDS) for each product your laboratory uses to see if it contains chemicals listed or defined as hazardous by MassDEP regulations. Learn more:

<http://www.mass.gov/eea/agencies/massdep/recycle/regulations/310-cmr-30-000.html>

Generator Status & Storage Limits

Any facility that generates hazardous wastes must register its status with MassDEP, obtain a site-specific identification (ID) number, store and label wastes appropriately, and arrange for timely shipment of accumulated wastes to a facility that is permitted by the state in which it is located to treat, store or dispose of these types of wastes.

A laboratory's "generator status" determines how much waste may be accumulated over what period of time before it must be shipped off-site for recycling or disposal. The following table provides an overview of generator status requirements.

	Very Small Quantity (VSQG)	Small Quantity (SQG)	Large Quantity (LQG)
Total Waste Generated Monthly	Less than 100 kg	More than 100 kg and less than 1000 kg	Greater than 1000 kg
Acute Waste	None allowed	Less than 1 Kg. (2.2 lbs)	More than 1 Kg.
Accumulation Limit	Up to 1000 kg	Up to 6000 kg	No limit
Storage Time Limit	No time limit	Up to 180 days	Up to 90 days

NOTE: 100 Kg = 220 pounds = 25 to 27 gallons (the actual weight and volume depends on the type of material)

To maintain a laboratory's generator status, do not accumulate a larger volume of waste on-site or store it for longer than allowed. Learn more about hazardous waste generator status and storage limits:

<http://www.mass.gov/eea/agencies/massdep/recycle/hazardous/hazardous-waste-generator-status-and-storage-limits.html>

MassDEP Hazardous Waste Registration

Any business or institution that ships hazardous waste off-site for recycling or disposal must register their generator status with MassDEP.

- **Lab Facilities that are Very Small Quantity Generators of hazardous wastes, including waste oil, or are Small Quantity Generators of waste oil** should submit a Generator Registration Form to MassDEP, which is available at: <http://www.mass.gov/eea/agencies/massdep/recycle/approvals/hazardous-waste-forms.html#5>
- **Small Quantity Generators and Large Quantity Generators of hazardous wastes** should submit a **Notification of Hazardous Waste Activity Form**, found at: <http://www.mass.gov/eea/docs/dep/recycle/approvals/hwactvty.pdf>
Additional information on hazardous waste activity notification can be found at: <http://www.mass.gov/eea/agencies/massdep/recycle/approvals/hazardous-waste-forms.html#5>
- **If a laboratory's generator status changes**, the owner or operator must notify MassDEP of this change, using the hazardous waste activity notification form: <http://www.mass.gov/eea/docs/dep/recycle/approvals/hwactvty.pdf>

Properly Storing & Labeling Wastes

Regardless of the laboratory's generator status, its hazardous waste storage area must be secured against unauthorized access and it must be posted with *Hazardous Waste* signs. Storage containers must be kept in good condition and labeled with the names of the wastes inside them, as well as the associated hazards (i.e., corrosive, ignitable, reactive or toxic). If the laboratory is a Small or Large Quantity Generator of hazardous waste, other requirements also apply.

Learn more:

<http://www.mass.gov/eea/docs/dep/recycle/laws/sqgsum.pdf> and

<http://www.mass.gov/eea/agencies/massdep/recycle/hazardous/the-very-small-quantity-generator-of-hazardous-waste.html>

Arranging for Timely Hazardous Waste Shipments

Each shipment of hazardous waste must be transported by a MassDEP-licensed hazardous waste transporter and must be accompanied by a manifest form. Manifest forms are available from transporters. For a list of licensed transporters, see:

<http://www.mass.gov/eea/docs/dep/recycle/hazardous/hwtran.pdf>

Please Note: Generators of hazardous waste **must not treat** the waste without obtaining a permit from MassDEP. Hazardous wastes that are **only** hazardous because of their corrosivity (pH of less than or equal to 2 or greater than or equal to 12.5), may be neutralized on-site and rendered non-hazardous before disposal.

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Mercury-Containing Materials

Many items that are commonly used by laboratories contain mercury, including measuring devices such as thermometers, thermostats, switches and relays, as well as mercury-containing lamps such as fluorescent bulbs. Massachusetts hazardous waste regulations for Universal Waste and the Massachusetts Mercury Management Act of 2006, require the collection, management, storage and recycling of mercury-containing devices and materials when these products reach the end of their useful lives. The applicable regulations can be found at:

<http://www.mass.gov/eea/docs/dep/service/regulations/310cmr30.pdf>

If a mercury-containing product is still offered for sale in Massachusetts, the manufacturer should be providing customers with information about how to ensure that the mercury in their product is recycled (rather than disposed of) when the product reaches the end of its useful life. See:

<http://www.mass.gov/eea/docs/dep/toxics/stypes/hgprdfax.pdf>

Other Requirements

Medical & Biological Labs

Medical and biological laboratories must manage medical and biological wastes, including sharps, without exposing workers or the public to unnecessary risks.

Medical, biological and pharmaceutical wastes must be separated from other wastes and transported by a medical waste transporter to a facility specifically licensed to destroy these wastes or render them “non-hazardous.” Learn more at:

<http://www.mass.gov/eea/agencies/massdep/recycle/hazardous/infectious-waste-disposal-and-transport.html>

Radiological Wastes

Some laboratories may generate radiological wastes (e.g., from X-rays, medical treatment, biological research and development, pharmaceutical and medicinal production, etc.). The Massachusetts Department of Public Health (DPH) regulates the management of these wastes. Learn more at the “Radiation Control” link at:

<http://www.mass.gov/eohhs/gov/departments/dph/>

For More Information

- Call the MassDEP Business Compliance Division at 617-292-5898.
- Call or visit the MassDEP regional office that covers your municipality. Find your region: <http://www.mass.gov/eea/agencies/massdep/about/contacts/>
- Follow the “Health Topics Index” link on the DPH web site: <http://www.mass.gov/dph/>

Please note that this fact sheet is a general guide to a variety of MassDEP regulations and requirements that may apply to your Lab. Other federal, state, and local rules, including those adopted by DPH and the U.S. Occupational Safety & Health Agency (OSHA), also may apply.

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